```
FILE 'HOME' ENTERED AT 12:41:55 ON 21 JAN 2008

=> file reg
COST IN U.S. DOLLARS                        SINCE FILE      TOTAL
                                               ENTRY    SESSION
FULL ESTIMATED COST                             0.21       0.21

FILE 'REGISTRY' ENTERED AT 12:42:21 ON 21 JAN 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   20 JAN 2008  HIGHEST RN 1000368-36-4
DICTIONARY FILE UPDATES:  20 JAN 2008  HIGHEST RN 1000368-36-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

*** YOU HAVE NEW MAIL ***

=>
Uploading C:\Program Files\Stnexp\Queries\10538904.str

L1      STRUCTURE UPLOADED

=> s l1 full
FULL SEARCH INITIATED 12:42:41 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -     2056 TO ITERATE

100.0% PROCESSED     2056 ITERATIONS                          96 ANSWERS
SEARCH TIME: 00.00.01

L2            96 SEA SSS FUL L1

=> file caplus
COST IN U.S. DOLLARS                        SINCE FILE      TOTAL
                                               ENTRY    SESSION
FULL ESTIMATED COST                           178.36     178.57

FILE 'CAPLUS' ENTERED AT 12:42:47 ON 21 JAN 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)
```

FILE COVERS 1907 - 21 Jan 2008 VOL 148 ISS 4
FILE LAST UPDATED: 20 Jan 2008 (20080120/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

http://www.cas.org/infopolicy.html

```
=> s l2
L3         2088 L2

=> s l3 and product? (5a) F (4a) tracer
        3018025 PRODUCT?
         641173 F
          57095 TRACER
              0 PRODUCT? (5A) F (4A) TRACER
L4            0 L3 AND PRODUCT? (5A) F (4A) TRACER

=> s l3 and 18F
           7000 18F
L5            5 L3 AND 18F

=> dup rem l5
PROCESSING COMPLETED FOR L5
L6             5 DUP REM L5 (0 DUPLICATES REMOVED)

=> d l6 bib abs 1-5

L6   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2004:1089333  CAPLUS
DN   143:326552
TI   Synthesis of [18F]Xeloda as a novel potential PET radiotracer
     for imaging enzymes in cancers
AU   Fei, Xiangshu; Wang, Ji-Quan; Miller, Kathy D.; Sledge, George W.;
     Hutchins, Gary D.; Zheng, Qi-Huang
CS   Department of Radiology, Indiana University School of Medicine,
     Indianapolis, IN, 46202, USA
SO   Nuclear Medicine and Biology (2004), 31(8), 1033-1041
     CODEN: NMBIEO; ISSN: 0969-8051
PB   Elsevier Inc.
DT   Journal
LA   English
OS   CASREACT 143:326552
AB   Xeloda (Capecitabine), a prodrug of antitumor agent 5-fluorouracil, is the
     first and only oral fluoropyrimidine to be approved for use as second-line
     therapy in metastatic breast cancer, colorectal cancer, and other solid
     malignancies. Fluorine-18 labeled Xeloda may serve as a novel radiotracer
     for positron emission tomog. (PET) to image enzymes such as thymidine
     phosphorylase and uridine phosphorylase in cancers. The precursor
     2',3'-di-O-acetyl-5'-deoxy-5-nitro-N4-(pentyloxycarbonyl)cytidine (11) was
     synthesized from D-ribose and cytosine in 8 steps with approx. 18% overall
     chemical yield. The reference standard 5'-deoxy-5-fluoro-N4-
     (pentyloxycarbonyl)cytidine (Xeloda; 1) was synthesized from D-ribose and
     5-fluorocytosine in eight steps with approx. 28% overall chemical yield. The
     target radiotracer 5'-deoxy-5-[18F]fluoro-N4-
     (pentyloxycarbonyl)cytidine ([18F]Xeloda; [18F]1) was
     prepared by nucleophilic substitution of the nitro-precursor with
     K18F/Kryptofix 2.2.2 followed by a quick deprotection reaction and purification
```

with the HPLC method in 20-30% radiochem. yields.
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1996:122359 CAPLUS
DN 124:219229
TI Monitoring gene therapy with cytosine deaminase: In vitro studies using tritiated-5-fluorocytosine
AU Haberkorn, Uwe; Oberdorfer, Franz; Gebert, Johannes; Morr, Iris; Haack, Karin; Weber, Klaus; Lindauer, Markus; Van Kaick, Gerhard; Schackert, Hans Konrad
CS Department Oncological Diagnostics and Therapy, German Cancer Research Center, Heidelberg, 69120, Germany
SO Journal of Nuclear Medicine (1996), 37(1), 87-94
CODEN: JNMEAQ; ISSN: 0161-5505
PB Society of Nuclear Medicine
DT Journal
LA English
AB Genetically modified mammalian cells that express the cytosine deaminase (CD) gene are able to convert the nontoxic prodrug 5-fluorocytosine (5-FC) to the toxic metabolite 5-fluorouracil (5-FU). PET with 18F -5-FC may be used for in vivo measurement of CD activity in genetically modified tumors. A human glioblastoma cell line was stably transfected with the Escherichia coli CD gene. After incubation of lysates of CD-expressing cells and control cells with 3H-5-FC high-performance liquid chromatog. (HPLC) was performed. The uptake of 5-FC was measured after various incubation times using therapeutic amts. of 5-FC. In addition, saturation and competition expts. with 5-FC and 5-FU were performed. Finally, the efflux was measured. We found that 3H-5-FU was produced in CD-expressing cells, whereas in the control cells only 3H-5-FC was detected. Moreover, significant amts. of 5-FU were found in the medium of cultured cells, which may account for the bystander effect observed in previous expts. However, uptake studies revealed a moderate and nonsaturable accumulation of radioactivity in the tumor cells, suggesting that 5-FC enters the cells only through diffusion. Although a significant difference in 5-FC uptake was seen between CD-pos. and control cells after 48 h of incubation, no difference was observed after 2 h of incubation. Furthermore, a rapid efflux could be demonstrated. 5-Fluorocytosine transport may be a limiting factor for this therapeutic procedure. Quantitation with PET has to rely more on dynamic studies and modeling, including HPLC anal. of the plasma, than on nonmodeling approaches.

L6 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1988:492932 CAPLUS
DN 109:92932
TI Fluorination of pyrimidines. Part 2. Mechanistic aspects of the reaction of acetyl hypofluorite with uracil and cytosine derivatives
AU Visser, Gerard W. M.; Herder, Renella E.; De Kanter, Frans J. J.; Herscheid, Jacobus D. M.
CS RNC, Free Univ., Amsterdam, 1007 MC, Neth.
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1988), (5), 1203-7
CODEN: JCPRB4; ISSN: 0300-922X
DT Journal
LA English
OS CASREACT 109:92932
AB The reaction of acetyl hypofluorite (AcOF) with uracil, cytosine, and some N-1-substituted derivs. dissolved in either acetic acid or water has been investigated. Anal. by radio HPLC using 18F as a tracer, and by 1H NMR revealed that a substituent at N-1 of uracil has a remarkable effect on the stability of the intermediate 6-acetoxy-5-fluoro-5,6-dihydrouracils. Substitution at N-1 of cytosine did not really enhance

the stability of the intermediate adducts. In addition, it was found that these cytosine adducts rapidly deaminate in water, yielding their corresponding uracil analog.

L6 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1986:185735 CAPLUS
DN 104:185735
OREF 104:29401a,29404a
TI Mechanism and stereochemistry of the fluorination of uracil and cytosine using fluorine and acetyl hypofluorite
AU Visser, Gerard W. M.; Boele, Saskia; Van Halteren, Bert W.; Knops, Gertrudis H. J. N.; Herscheid, Jacobus D. M.; Brinkman, Gerard A.; Hoekstra, Arend
CS Radio-Nuclide Cent. (RNC), Free Univ., Amsterdam, 1007 MC, Neth.
SO Journal of Organic Chemistry (1986), 51(9), 1466-71
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
OS CASREACT 104:185735
AB The products of the reaction of CH3COOF and F2 with uracil and cytosine dissolved in acetic acid and water were studied by using 18F as a tracer. Apart from 5-fluorouracil and the 5,5-difluoro adducts, the 1H NMR spectra of the crude reaction mixture showed the presence of two geometric isomers of both 5-fluoro-6-acetoxy-5,6-dihydrouracil and 5-fluoro-6-hydroxy-5,6-dihydrouracil. In the fluorination of cytosine, corresponding products were observed with the exception of the acetoxy adducts. For both reagents and for both substrates a radical-cation mechanism is proposed. The observed conversions of the acetoxy adducts of uracil are explained by an acylimine intermediary.

L6 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1985:592398 CAPLUS
DN 103:192398
OREF 103:30921a,30924a
TI Synthesis and biodistribution of [18F]-5-fluorocytosine
AU Visser, G. W. M.; Boele, S.; Knops, G. H. J. N.; Herscheid, J. D. M.; Hoekstra, A.
CS Radio-Nuclide Cent., Free Univ., Amsterdam, 1007 MC, Neth.
SO Nuclear Medicine Communications (1985), 6(8), 455-9
CODEN: NMCODC; ISSN: 0143-3636
DT Journal
LA English
AB 5-[18F]fluorocytosine (I) was prepared by reaction of cytosine with [18F]acetylhypofluorite in AcOH with 20% radiochem. yield. Tissue distribution studies of I performed in sarcoma-bearing rats showed that I was stable in vivo for ≥4 h and was rapidly excreted by kidneys into the urine. I was not a good tumor-localizing agent with tumor-to-blood and -to-muscle ratios of only 1.

=>